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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/18/2006

Edward W. Taylor Jr

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EXAMINER

NEGRELLI, KARA B

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

09/30/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/566,148	Applicant(s) TAYLOR JR, EDWARD W.	
	Examiner KARA NEGRELLI	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 3,5,18-19,21-23,25-32,34-55 and 57-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4, 6-17, 20, 24, 33, and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

WATERBORNE COATINGS AND FOAMS AND METHODS OF FORMING THEM

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of claims 1-18, 20, 21, 24, 33, and 56 in the reply filed on May 4, 2009 is acknowledged. The traversal is on the ground(s) that there is that the common inventive concept permeating all claims is that the inventive foams are room temperature curable. This is not persuasive because the common inventive limitations which can be found in all the independent claims include a sulfonyl hydrazide blowing agent and a curing agent, which can be found in the prior art. Czaplicki et al. (US 2003/0069335) teach a material, method, and application of structural members, said method and material of which comprise a sulfonyl hydrazide blowing agent (paragraph [0013], lines 23-26) and a curing agent (paragraph [0013], lines 37-39). The limitation that the foams are room temperature curable is not found in all the independent claims, such as claims 1, 25, 36, and 55. Thus, these independent claims do not require that the foams are room temperature curable. For this reason, the common technical feature permeating all claims is not that the inventive foams are room temperature curable, but rather the common technical feature is a sulfonyl hydrazide blowing agent and a curing agent, which is found in all of the independent claims.
2. It is noted that applicants wish to have examination center on the species of invention illustrated in working examples 1 and 1A. See Applicant's Response dated July 21, 2009. Applicant states that claims 1, 2, 4-16, 24 and 56 read on the elected species of Examples 1 and 1A. It is noted that the epoxy resin used in examples 1 and

Art Unit: 1796

1A is a bisphenol A resin, and not an epichlorohydrin adduct as recited in instant claim 5. Therefore, because claim 5 recites an epoxy adduct that is not included in the elected species of examples 1 and 1A, claim 5 is not elected.

3. Furthermore, it is noted that the applicants have not made an election between the methods of claims 31 and 32, or a particular fire retardant specified in claims 18, 42, and 58, because "the practical effect of such an election would be to restrict the claims for examination purposes to a specie which is different [than] applicant's species of interest." Therefore, claims 18, 31, 32, 42, and 58 and all claims dependent are withdrawn from consideration. In other words, the election of species requirement is drawn to the non-elected invention, and therefore, applicant has not elected a species of method (claims 31 or 32) or flame retardant (claim 18).

4. Therefore, claims 3, 5, 18-19, 21-23, 25-32, 34-55, and 57-67 are respectfully withdrawn from consideration.

Claim Objections

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

6. Misnumbered claim 55 on page 25, starting with "A two part chemical blowing agent comprising..." has been renumbered 52. Because of this typo, the subsequent

Art Unit: 1796

claims are also misnumbered. Therefore, claims 56-67 on pages 25-26 are renumbered claims 53-64.

7. All citations to claim numbers from this point on will refer to the new numbering described in paragraph 2 above. Claim 56 will be referred to as claim 53.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 8-10, 12-13, 15-17, 20, 24, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Wycech (US 5,755,486).

10. Wycech teaches a material comprising a synthetic resin, a foaming agent, a curing agent and a filler, wherein said foaming agent may comprise P,P'-oxybis (benzene sulfonyl hydrazide) which comprises from about 0.1 to about 10% of the resin body. The synthetic resin may comprise an epoxy resin such as bisphenol A or bisphenol F (column 6, lines 23-34) and may further comprise elastomers such as polybutyl rubber or acrylonitrilebutadiene rubber (column 5, lines 57-60). The fillers may comprise calcium carbonate or fumed silica (column 5, lines 61-65). Wycech further teach that the material may be phosphated (pertaining to instant claims 17-18). Wycech does not disclose that the reactants are reacted under external heat or

Art Unit: 1796

pressure. Therefore, one of ordinary skill in the art would reasonably conclude that the process is at ambient temperature and pressure.

11. As to claim 33, case law holds that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

12. Claims 1, 8-10, 13, 15-16, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wycech (US 6,068,424).

13. Wycech teaches a formulation comprising an epoxy resin, acrylonitrile/butadiene resin, at least one filler, and Celogen OT (a sulfonyl hydrazide blowing agent) (See column 5, lines 12-26), wherein the blowing agent is present in an amount of from 0.5 to 5 wt. % (column 4, lines 42-43).

14. Claims 1, 8-10, 12-13, 15-16, 20 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Czaplicki et al. (US 2003/0069335).

15. Czaplicki et al. teach a material comprising an epoxy resin such as bisphenol A or bisphenol F, including an adduct of such epoxy, such as a rubber adduct (latex),

Art Unit: 1796

less than about 2 wt % of a p, p-oxybibenzene sulfonyl hydrazide blowing agent, a curing agent, and at least one filler, wherein said filler may comprise calcium carbonate or aramid fibers (paragraph [0013]). Furthermore, the material may cure at a variety of temperatures (with or without external heat).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 2, 4, 6, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czaplicki et al. (US 2003/0069335) and further in view of Wycech (US 4,995,545).

18. Czaplicki et al. teach the composition as applied to claim 1 above, but do not expressly teach that the curing agent is a waterborne polyamide or polyamine, an emulsion of an epoxy adduct of a polyamine, or an emulsion of an epoxy adduct of a polyamide amine, or that the curing agent is used in an amount of from 30 to 70% by weight.

19. However, Wycech (US 4,995,545) teach structural members comprising a bisphenol A epichlorohydrin resin (column 6, lines 24-24-27), a filler such as hydrated magnesium silicate or hydrated aluminum silicate (endothermic fillers) (column 7, lines

Art Unit: 1796

17-23), an expandable agent (column 6, lines 36-37), and a curing agent, Interez 826 Hardener), which is an aliphatic amine adduct partially reacted with an epoxy resin (column 8, lines 5-17) or a curing agent, Epicure 856 which is an aliphatic amido amine (column 8, lines 10-17). The curing agent is used at a concentration of about 10 to about 90 % by weight, and preferably about 30% to about 85% by weight (column 8, lines 1-5).

20. It would have been obvious for one of ordinary skill in the art to use the curing agents taught by Wycech in the composition taught by Czaplicki because the curing agents taught by Wycech promotes rapid and moderately exothermic cure, but not so rapid that the compositions become crosslinked before they can be molded (column 7, lines 50-55). Furthermore, if the crosslinking is exothermic, additional external heat would not be necessary to cure the composition.

21. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Czaplicki et al. (US 2003/0069335) and further in view of Carpenter, "Polysulfides (Use as Modifiers in Epoxy Systems)."

22. Czaplicki et al. teach the composition as applied to claim 1 above, but do not expressly teach that the epoxy resin comprises an epoxy terminated polysulfide.

23. However, Carpenter teaches a method for formulating polysulfide/epoxy systems and use of these systems to produce polymer products, The production of polymer products comprising co-reacting polysulfide with epichlorhydrin or an epoxy resin to

Art Unit: 1796

make versatile epoxy formulations. See column 1 of page 6852, "Polysulfides (Use as Modifiers in Epoxy Systems," Carpenter.

24. It would have been obvious for one of ordinary skill in the art to use the polysulfide epoxy systems of Carpenter in the compositions of Czaplicki et al. because formulations based on the reaction of polysulfide with epichlorohydrin and/or epoxy resins exhibit excellent fuel resistance, good flexibility, and improved adhesion to various substrates. See column 1 of page 6852, "Polysulfides (Use as Modifiers in Epoxy Systems," Carpenter.

25. Claims 1, 2, 4, 6-7, 14, 17, 24, 33, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. (US 2002/0013389) and further in view of Starner (US 7,282,543).

26. Taylor et al. teach polymeric blends comprising at least one epoxy resin (paragraph [0009]), fillers and/or flame retardants (paragraph [0011]), in which said filler may comprise iron oxide (endothermic filler) (paragraph [0014]), a sulfonyl hyrazide blowing agent (paragraph [0019]), a curing agent (paragraph [0021]), and which may comprise or various rubber materials (paragraph [0008], pertaining to instant claim 12) or epoxy resins (paragraph [0022]). Taylor et al. further teach that the curing agent may be activated at room temperature (paragraph [0026]).

27. As to claim 33, Case law holds that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention

Art Unit: 1796

and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

28. Taylor et al. do not expressly teach that the curing agent is a waterborne polyamide or polyamine, an emulsion of an epoxy adduct of a polyamine, or an emulsion of an epoxy adduct of a polyamide amine, or that the curing agent is used in an amount of from 30 to 70% by weight.

29. However, Starner et al. teach water soluble polyepoxy resins used in curable compositions. The compositions comprise a curative material, wherein the curative material comprises 49 parts by weight of Anquamine (an aliphatic amine) and water, and wherein the curative material is used to produce a water soluble epoxy resin (column 12, lines 50-67).

30. It would have been obvious for one of ordinary skill in the art to use the curative of Starner et al. in the composition of Taylor et al. because the curatives of Starner et al. enhance the water solubility of polyepoxy resins and, as such, may either expand the range of polyepoxy resins which may be utilized partially or completely in aqueous formulations, improve their overall performance, or simplify processes in which the polyepoxy resins are employed (column 3, lines 55-64).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is (571)270-7338. The examiner can normally be reached on Monday through Friday 8:00 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KARA NEGRELLI/
Examiner, Art Unit 1796

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

Application/Control Number: 10/566,148
Art Unit: 1796

Page 11